



AMENDMENT TO CLAIMS

1. (Currently Amended) An installation for thermal quenching an elongate metal element, for example a motor vehicle suspension element, the installation comprising:

- induction heater means including a stationary induction coil;
- handling means engageable with said element, said handling means at least including comprising a first multi-axis robot carrying said metal element and arranged for causing to cause said element to pass through said induction coil following a predetermined path, said handling means being arranged for varying orientation of said element with respect to said coil when passing therethrough; and
- cooling means arranged downstream from said induction ~~emulsion~~ coil in a the travel direction of said element.

2. (Original) An installation according to claim 1, wherein said handling means are arranged to move said element so that a neutral fiber thereof passes through said coil substantially in its center.

3. (Original) An installation according to claim 1, wherein said handling means include retractable clamps mounted spaced apart from one another on a support in order to hold said element while it is going through said coil.

4. (Original) An installation according to claim 3, wherein said support carries three above-specified clamps, one of which is mounted to slide freely.

5. (Original) An installation according to claim 1, wherein said induction coil is substantially horizontal.

6. (Original) An installation according to claim 1, wherein said cooling means comprise a shower of annular structure dimensioned to be capable of having said elements pass there through, said shower being arranged downstream from said induction coil and in the vicinity thereof.

7. (Original) An installation according to claim 6 taken together, wherein said shower is carried by a second multi-axis robot operating synchronously with said first robot.

8. (Original) An installation according to claim 6, wherein said shower has a screen-forming inlet face provided with a central passage through which said element is engaged, and wherein said passage is extended by a shower cavity in which nozzles are installed to spray a cooling fluid, said nozzles being directed substantially towards the axis of said central passage, downstream from said central passage.

9. (Withdrawn) A method of fabricating an elongate metal element, the method including a thermal quenching step consisting in causing said element to pass through a stationary induction coil by manipulating it with a multi-axis robot, said coil forming part of induction heater means, and in cooling the element downstream from said induction coil.

10. (Withdrawn) A fabrication method according to claim 9, wherein said elongate metal element is made out of a solid metal bar, and surface quenching is performed in order to obtain an external zone of martensitic structure and a core zone of ferrito-pearlitic structure.

11. (Withdrawn) A method according to claim 9, wherein said element is made out of a tubular metal bar, and quenching is performed over a depth suitable for creating a martensitic structure throughout the thickness of the wall of said tubular bar, and the inside of said tubular bar is subjected to shot-blasting.

12. (Withdrawn) Method according to claim 9, wherein said element is made out of a tubular metal bar of constant thickness.

13. (Withdrawn) Method according to claim 9, wherein said element is made out of a tubular metal bar of variable thickness, the thickest parts of said bar corresponding to regions of the element submitted to more important strains.

14. (Withdrawn) Method according to claim 9 wherein parts of said bar corresponding to regions of said element submitted to more important strains are specifically or solely treated.

15. (New) An installation for thermal quenching an elongate metal element, for example a motor vehicle suspension element, the installation comprising:

- handling means engageable with said element, said handling means at least including a first multi-axis robot carrying said metal element and arranged for causing said element to pass through said induction coil following a predetermined path, said handling means being arranged for varying orientation of said element with respect to said coil when passing therethrough; and

- a shower cooling means having an annular structure dimensioned to be capable of having said elements pass therethrough and carried by a second multi-axis robot operating synchronously with said first robot, said shower being arranged downstream from said induction coil and in the vicinity thereof arranged downstream from said induction coil in a travel direction of said element.